Dehydration Myths: 7 Things You Should Know About Staying Hydrated

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Every single cell in the human body needs water to function properly. We need water to regulate our temperature, to cushion and protect joints and organs and to help digestion move smoothly. Most of us drink at least some water every day, but now that it's summer and the mercury is rising, it's important to be more vigilant than ever. Need to raise that hydration IQ? Here are some of the most common dehydration myths -- and the facts behind them.

Myth: Dehydration is uncomfortable, but not dangerous.
Fact: While most of us will only ever experience mild dehydration symptoms like headache, sluggishness or decreased urine or sweat output, it can become severe and require medical attention. Serious complications include swelling of the brain, seizures, kidney failure and even death, according to the Mayo Clinic.
Fortunately, adults can usually nip mild or moderate dehydration in the bud with some extra fluid, according to the Mayo Clinic. But when not attended to in early stages, adults may develop extreme thirst, dizziness and confusion, and stop urinating. Symptoms should be taken even more seriously in children and older adults, according to the Mayo Clinic, especially diarrhea, vomiting, fever, inability to keep fluids down, irritability or confusion.

Myth: If you're thirsty, you're already dehydrated.
Fact: It's not too late. In fact, thirst is the body's way of telling you to drink water, and you're not at risk of becoming dangerously dehydrated the minute you feel a little parched. "When you get thirsty, the deficit of water in your body is trivial -- it's a very sensitive gauge," Dr. Stanley Goldfarb, professor of medicine at the University of Pennsylvania, told HuffPost in January. "It might be only a 1 percent reduction in your overall water. And it just requires drinking some fluid."

In fact, drinking when you're thirsty (sounds pretty basic, right?) is a pretty fail-proof method of staying hydrated, says Dr. Timothy Noakes, professor of exercise and sports science at the University of Cape Town in South Africa and author of *Waterlogged*. "You don't tell your dog or your cat when to drink, they've got a thirst mechanism," he tells HuffPost. "Why should it be that humans should be the unique animal in the world who have to be told when to drink?"

He attributes this "you're doing it wrong" attitude largely to the bottled-water and sports drink industries. "Commercialization and industrialization have told us that humans are weak," he says, when in reality our ability to run in the heat helped us outsmart our ancient predators like lions and tigers, he says. "We should never have survived, and suddenly we're told no one knows when to drink?"

Myth: Everyone needs to drink eight glasses of water a day.

Fact: This general rule of thumb is outdated, propagated today mostly by bottled water companies. So how much do you really need to drink?

The Institute of Medicine (IOM) recommends men get roughly three liters of total beverage intake every day, and women get 2.2 liters, while others say there's no need to force water consumption if you're not thirsty.

Keep in mind those suggested intake levels include more than just water alone, says Noakes. "What you *should* say is glasses of *fluid* a day," he says, remembering to sip additional liquids the more you exercise. Coffee, tea, fruit juices, even sweetened beverages provide your body with more water -- although we wouldn't recommend the latter for hydration purposes or much of anything, really. Even food counts. About 20 percent of the average person's water intake comes from food, according to the IOM, especially from foods with high water content, like watermelon and cucumbers.

At the end of the day, how much water you should drink is extremely personal: whatever quenches *your* thirst.

Myth: Clear urine is a sure sign of hydration.
Fact: While keeping an eye on your urine output maybe isn't the most pleasant summer activity, it really can provide a measure of how hydrated (or dehydrated) you are, essentially in real time. But it's not clear urine that you're looking for, but rather a pale yellow. Lawrence Armstrong, Ph.D., an exercise physiologist and professor at the University of Connecticut's Human Performance Laboratory, established a urine color chart to model a measure of dehydration. Based on where you fall on the chart, you can adjust your fluid intake accordingly, the New York Times reported. (Keep in mind that certain supplements -- and foods -- can change the color of your urine.)

Myth: There's no such thing as *too much* water
Fact: Overhydrating can be extremely dangerous -- but it's relatively rare.
Drinking too much water leads to what's called hyponatremia, when levels of sodium in the body are so diluted that the cells begin to swell, according to the Mayo Clinic. Symptoms usually include nausea, vomiting, headache, confusion and fatigue, and can escalate to seizures and coma.
That doesn't mean don't drink when you're thirsty! It truly takes guzzling copious amounts to cause so-called water-intoxication. That's why refueling marathon runners, for example, are some of the more common hyponatremia sufferers. Of the estimated 2,600 cases of hyponatremia that have resulted in hospitalization that Noakes is aware of, he says there's "no reason they should have gotten sick." We

only get ourselves into trouble when we drink beyond our thirst, he says, whether that's because of out-of-date advice or a sports drink commercial.
If you're *still* worried, consider this rule of thumb: Try not to drink to the point where you feel full from water alone, Shape.com reported.

Myth: Exercisers need sports drinks
Fact: If you're working out for less than an hour, water will do just fine. You don't deplete electrolyte and glycogen reserves until you've been exercising intensely for over an hour. Endurance athletes can benefit from the right mix of sugar (read: energy) and sodium, although today's sports drinks, with their miles-long ingredients list full of impossible-to-pronounce artificial additives may not necessarily be the smartest pick.
Instead, make your own! Or try some of these foods that can act as a natural alternative to sports drinks. Or consider forgoing it altogether. Many of us eat a diet so high in carbohydrates and sodium already that "replenishing" with an electrolyte drink after today's workout may just mean excreting it tomorrow, says Noakes.

Myth: Coffee dehydrates you.
Fact: Only if you overdo it. While caffeine is dehydrating, the water in coffee (and tea, for that matter) more than makes up for the effects, ultimately leaving you more hydrated than you were, pre-java. Consuming 500 or more milligrams of caffeine a day -- anywhere from around three to five cups of coffee -- could put you at risk for dehydration, Mayo Clinic nutritionist Katherine Zeratsky, RD, tells HuffPost Healthy Living, but let's all agree to know when to say when.

DRINK TO YOUR HEALTH

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EXPERIENCE LIFE TEAM · JUNE 2010

Proper hydration is key to good health, but why? And what's the best way to get what our bodies really need? Our experts debunk a few myths.

Water is the body's most non-negotiable nutrient. Withhold any other vitamin or mineral for a week or more and the body will plug along. But deny it water for a mere three days and systems start to crash. Without water, the blood thickens and the body's enzymatic processes — normally zipping along — get bogged down. Hold back another few days and the blood gets so gummy that the body's inner workings grind to a halt. After that, odds of survival are grim.

Why is there so little wiggle room when it comes to water? Because water plays an integral role in nearly every biological process in the body. Everything from controlling the body's thermostat to regulating blood pressure to taking out the trash relies on water to get the job done. Yet, for such a life-and-death nutrient, most of us take water for granted. Sure, we know we *should* imbibe, but how much? Does the water in caffeinated drinks, like coffee and soda, count for or against us? And should you drink before you're thirsty or wait for your thirst signal to kick in?

"A lot of what we think about water is sheer guesswork," says Elson Haas, MD, an integrated-medicine physician in San Rafael, Calif., and the author, most recently, of *Staying Healthy with Nutrition* (Celestial Arts, 2006). "A lack of research has led to a lack of knowledge. In fact, most of what people think they know about water isn't even true."

To get beyond confusing water myths and delve into some commonsense wisdom, we tapped several experts on water intake and human health. Here are the ins and outs of keeping your body well watered.

MYTH NO. 1: DEHYDRATION IS RELATIVELY RARE AND OCCURS ONLY WHEN THE BODY IS DEPRIVED OF WATER FOR DAYS.

Reality: Low-grade dehydration (versus acute and clinical dehydration) is a chronic, widespread problem that has major impacts on well-being, energy, appearance and resiliency. Christopher Vasey, ND, a Swiss naturopath and author of *The Water Prescription* (Healing Arts Press, 2006), believes that most people

suffer regularly from this type of chronic dehydration because of poor eating and drinking habits.

While chronic dehydration does not directly result in death, “the lack of water results in a general weakening of the body’s internal cellular environment,” says Vasey, which can give rise to a number of health problems. For example, chronic dehydration can cause digestive disorders because our bodies need water to produce the digestive juices that aid the digestive process. If we don’t get that water, we don’t secrete enough digestive juices, and a variety of problems — such as gas, bloating, nausea, poor digestion and loss of appetite — can ensue. (For more health problems that can result from chronic dehydration, including energy loss, respiratory troubles, skin problems and obesity, see “Why Water Matters,” page 65.)

Bottom Line:If you’re not actively focusing on hydrating throughout the day, there’s a good chance you could be at least somewhat dehydrated, which could be negatively affecting your energy, vitality and immunity — as well as your appearance. Experiment with drinking more water throughout the day. You may observe an almost immediate difference in your well-being, and even if you don’t, establishing good hydration habits now will do many good things for your cellular health over the long haul.

MYTH NO. 2: YOUR BODY NEEDS EIGHT, 8-OUNCE GLASSES OF WATER DAILY.

Reality: Your body does need a steady supply of water to operate efficiently and perform the many routine housekeeping tasks that keep you healthy and energetic.

So it’s probably a very good idea to consume moderate quantities of water at regular intervals.

That said, there is no scientific evidence to back up the very specific and well-worn advice that you need to drink eight, 8-ounce glasses of water a day (a.k.a. the 8 x 8 rule). In 2002, Heinz Valtin, MD, a retired physiology professor from Dartmouth Medical School and author of two textbooks on kidney function, published the definitive paper on the subject in the *American Journal of Physiology*. He spent 10 months searching medical literature for scientific evidence of the 8 x 8 rule only to come up empty-handed.

In 2004, the Institute of Medicine (IOM), a division of the National Academy of Sciences, actually set the adequate total-daily-water intake at higher than 64 ounces — 3.7 liters (125 fluid ounces) for men and 2.7 liters (91 fluid ounces) for women. But those numbers refer to total water intake, meaning all beverages and water-containing foods count toward your daily quota. Fruits and veggies, for example, pack the most watery punch, with watermelon and cucumbers topping the list.

But the “it all counts” dynamic cuts both ways. Vasey believes that many people suffer from low-grade, chronic dehydration because of what they are eating as well as what they are drinking. The “I don’t like water” crowd could probably make up their water deficits by eating the right kinds of foods, he asserts, “but most don’t eat enough fruits and vegetables. Instead they eat meat, cereals and breads, which don’t have much water and contain a lot of salt.”

Animal proteins require a great deal more moisture than they contain to break down, assimilate and then flush from the body. And many processed foods, such as chips and crackers, for example, are nearly devoid of moisture,

so — like dry sponges — they soak up water as they proceed through the digestive system.

A second strike against refined foods is the salt factor. Most processed foods, especially cheese and cold cuts, are packed with sodium. The body requires only 3 to 5 grams of salt a day to stay healthy, but most people gobble up 12 to 15 grams of the stuff daily. To rid itself of the overload, the body requires copious amounts of liquid. So you have to weigh your personal intake thoughtfully.

“Some people drink plenty of water, but the majority don’t,” Vasey says. To counteract anything resembling a standard American diet, says Vasey, “you must drink more.”

Bottom Line: If you want to stay optimally healthy, hydrated and energetic, it’s a good idea to eat plenty of water-containing foods *and* drink water throughout the day. And when in doubt, it’s probably not a bad idea to make a point of drinking a little more water, rather than a little less. But that doesn’t mean you need to down eight glasses exactly, or that if you run a little shy of 64 ounces, then something awful is going to happen. Just be aware that the fewer vegetables, fruits and legumes you are eating, and the more dried, processed or chemical-laced foods you include in your diet, the more water you’ll need to consume to compensate.

MYTH NO. 3: WHEN IT COMES TO HYDRATING, ALL BEVERAGES ARE CREATED EQUAL.

Reality: Not so. In principle, the 90 to 125 (or so) ounces recommended by the Institute of Medicine would include your morning coffee, the soda you drink with lunch and even a glass of wine at dinner. Practically speaking,

however, caffeinated, sweetened and alcoholic drinks pack chemical cargoes (or trigger chemical reactions) that demand significant amounts of fluid to properly process and filter. As a result, nonwater beverages can actually set you back, water-wise, many experts suggest. “They can actually dehydrate the body,” says Haas.

For example, says Vasey, drinks like coffee, black tea and cocoa are very high in purines, toxins that must be diluted in large quantities of water to be flushed from the body. “The consumption of these drinks might bring a large quantity of water into the body, but a large portion of this water is used to eliminate the toxins in these drinks,” he says.

Artificially sweetened drinks add to the body’s toxic burden. Sugar and coffee also create an acidic environment in the body, impeding enzyme function and taxing the kidneys, which must rid the body of excess acid.

Moreover, says Vasey, caffeine found in coffee, black tea and soft drinks adversely affects your body’s water stores because it is a diuretic that elevates blood pressure, increasing the rate of both the production and elimination of urine. “The water in these drinks travels through the body too quickly,” says Vasey. “Hardly has the water entered the bloodstream than the kidneys remove a portion of the liquid and eliminate it, before the water has time to make its way into the intracellular environment.” (For more on the importance of intracellular hydration, see “Myth No. 5.”)

Bottom Line: Don’t think you can toss back a few cans of Red Bull and call it a day. Moderate consumption of beverages like coffee and tea is fine, but be aware that while some of the fluids in nonwater beverages may be helping you, certain ingredients may be siphoning away

your body’s water stores. So, when you’re drinking to hydrate, stick primarily with water. And, if you’re looking for a pick-me-up, try sparkling water with a squeeze of citrus.

MYTH NO. 4: BY THE TIME YOU GET THIRSTY, YOU’RE ALREADY DEHYDRATED.

Reality: Again, it depends on what you mean by “dehydrated.” Experts like Vasey posit that while those walking around in a state of subclinical dehydration may not feel thirst, their bodies are sending other signals of inadequate hydration — from headaches and stomachaches to low energy to dry skin.

But when it comes to avoiding the more widely accepted definition of clinical dehydration, thirst is a good indicator of when you need to swig. Here’s the deal: As water levels in the body drop, the blood gets thicker. When the concentration of solids in the blood rises by 2 percent, the thirst mechanism is triggered. A 1 percent rise in blood solids could be called “mild dehydration,” but it could also be considered a normal fluctuation in bodily fluids.

Either way, feeling thirsty is a good indicator that you need to get some water into your body, and soon. Serious symptoms of dehydration don’t arise until blood solids rise by 5 percent — long after you feel thirsty. But, obviously, you don’t want to wait that long. Even mild, subclinical levels of dehydration come with sacrifices in optimal vitality, metabolism and appearance. ↬ Like an underwatered plant, the body can survive on less water than it wants, but it’s unlikely to thrive.

It’s important to recognize, though, that drinking too much of the wrong thing can pose its own problems.

Americans now drink nearly 21 percent of their daily calories, and those who glug down the most sugar-laden beverages are more likely to be overweight and obese than those who drink the least.

In a study published last year in the *Journal of the American Dietetic Association*, researchers found that people drank in response to thirst only 2 percent of the time. Obviously, a lot of the drinking we do, we do for pleasure or entertainment, not hydration.

“It’s easy to drink without thirst,” says Richard Mattes, PhD, MPH, RD, a professor of foods and nutrition at Purdue University in West Lafayette, Ind., and one of the study’s authors. “There is a large array of palatable beverages available to us much of the time and only weak internal signals inhibiting drinking. This facilitates drinking whether we’re thirsty or not.”

Bottom Line: Drinking water *only* when you’re thirsty may relegate you to being less than optimally hydrated much of the time, and it may undermine your energy and vitality. On the other hand, constantly sipping or gulping calorie- or chemical-laden beverages for entertainment is a bad idea. So if you tend to keep a bottle of soda on your desk all day, or if you’re never seen without your coffee cup in hand, rethink your approach. Get in the habit of drinking a glass of water first thing in the morning, and a few more glasses of water throughout the day. You may want to keep a glass or bottle of water nearby so you are prompted to notice thirst when it arises, or better yet, to drink proactively (especially important during strenuous exercise, long airplane flights and in hot weather).

MYTH NO. 5: HYDRATING IS ALL ABOUT WATER.

Reality: Nope. It takes a delicate balance of minerals, electrolytes and essential fatty acids to get and keep water where it needs to be — properly hydrating your bloodstream, your tissues and your cells.

“You can drink lots of water and still be dehydrated on a cellular level,” says Haas. Water you drink is absorbed from the digestive tract into the bloodstream by small blood vessels (capillaries). Of the water contained in food and beverages, 95 percent ends up in the blood. From the blood, water moves into the fluid surrounding the cells, called extracellular fluid. That’s important, but it’s not the end of the line. Water needs to get inside cells for you to maintain optimal health.

A person’s vitality is affected by how well his or her body gets water into and out of cells, says Haas. A variety of unhealthy lifestyle habits and health conditions can inhibit this cellular capacity, he notes. But naturally, too, as the body ages, the water inside cells (intracellular) tends to diminish, and water outside cells (extracellular or interstitial fluid) tends to accumulate. Haas calls this gradual drying out of cells a “biomarker of aging.”

Minerals, especially electrolytes and trace minerals, are essential to maintaining cellular equilibrium. Minerals help transport water into the cells, where they also activate enzymes. And enzymes are the basis of every biological process in the body, from digestion to hormone secretion to cognition. Without minerals, says Haas, enzymes get sluggish and the body suffers.

Without essential fatty acids — which form the basis for cellular membranes — cells can’t properly absorb, hold and stabilize the water and other nutrients they’re supposed to contain.

Bottom Line:Take in plenty of minerals by eating lots of fresh fruits, vegetables, nuts and seeds — ideally from

produce grown according to biodynamic farming practices, meaning the farmer is supporting (rather than depleting) nutrients in the soil. Another way to boost minerals in the diet is cooking with a high-quality sea salt. A natural, unrefined sea salt will deliver up to 60 trace minerals your body needs to manage water flow. Also, try to include whole foods that are high in essential fatty acids, which are critical to maintaining healthy cell membranes that can hold in moisture. And consider a multimineral supplement that includes an ample supply of trace minerals in its formulation.

MYTH NO. 6: HEALTHY URINE IS ALWAYS CLEAR.

Reality:Urine color is directly linked to hydration status because the yellow tint is a measure of how many solid particles, such as sodium, chloride, nitrogen and potassium, are excreted. The color’s intensity depends on how much water the kidneys mix with the solids. Less water equals darker urine. More water equals lighter urine. Dark or rank-smelling urine are signs your body may need more water. But light-to-medium yellow urine is fine. Very clear urine may actually be a signal that your kidneys are taxed by the amount of fluid moving through them and the minerals in your body are being too diluted.

Also note that some vitamins, such as riboflavin, or B2, can turn urine bright yellow, so don’t be alarmed if your urine is a funny color after either swallowing a multivitamin or eating certain foods, like nutritional yeast, which is high in B vitamins.

Bottom Line: Drink enough water to make light yellow (lemonade-colored) urine. The volume depends on your activity level and metabolism. If your urine is cloudy or

dark or foul smelling, increase your water intake and monitor changes. If you don’t see a positive change, consult a health professional.

MYTH NO. 7: DRINKING TOO MUCH WATER LEADS TO WATER RETENTION.

Reality: The body retains water in response to biochemical and hormonal imbalances, toxicity, poor cardiovascular and cellular health — and, interestingly, dehydration. “If you’re not drinking enough liquid, your body may actually retain water to compensate,” says Vasey, adding that a general lack of energy is the most common symptom of this type of water retention. “Paradoxically, you can sometimes eliminate fluid retention by drinking more water, not less, because if you ingest enough water, the kidneys do not try and retain water by cutting back on elimination,” he explains.

Bottom Line:No good comes of drinking less water than you need. If you have water-retention problems, seek professional counsel to help you identify the root cause (food intolerances, for example, are a common culprit in otherwise healthy people). Do not depend on diuretics or water avoidance to solve your problems, since both strategies will tend to make the underlying healthy challenges worse, not better.

MYTH NO. 8: YOU CAN’T DRINK TOO MUCH WATER.

Reality: Under normal conditions, the body flushes the water it doesn’t need. But it is possible — generally under extreme conditions when you are drinking more than 12 liters in 24 hours or exercising heavily — to

disrupt the body’s osmotic balance by diluting and flushing too much sodium, an electrolyte that helps balance the pressure of fluids inside and outside of cells. That means cells bloat from the influx and may even burst.

While the condition, called hyponatremia, is rare, it happens. Long-distance runners are at highest risk for acute hyponatremia (meaning the imbalance happens in less than 48 hours), but anyone can get in trouble if they drink water to excess without replacing essential electrolytes and minerals. Extreme overconsumption of water can also strain the kidneys and, if drunk with meals, interfere with proper digestion.

Chronic hyponatremia, meaning sodium levels gradually taper off over days or weeks, is less dangerous because the brain can gradually adjust to the deficit, but the condition should still be treated by a doctor. Chronic hyponatremia is often seen in adults with illnesses ↬ that leach sodium from the body, such as kidney disease and congestive heart failure. But even a bad case of diarrhea, especially in children, can set the stage for hyponatremia. Be on the lookout for symptoms such as headache, confusion, lethargy and appetite loss.

Bottom Line: Never force yourself to drink past a feeling of fullness. If you are drinking copious amounts of water and still experiencing frequent thirst, seek help from a health professional. If you’re drinking lots of fluids to fuel an exercise regimen that lasts longer than one hour, be sure to accompany your water with adequate salts and electrolytes. For information on wise fitness-hydration strategies, read “How to Hydrate” in our December 2007 archives at experiencelife.com.

Although medical researchers will continue to duke it out over the finer points of exactly what we should be

drinking when, most integrative health professionals agree that the vast majority of Americans would benefit from making proper hydration a higher priority. The good news is that the key components of that endeavor — drinking pure water, eating whole foods, and emphasizing a full array of minerals and fatty acids — support not just proper hydration, but virtually every other aspect of health and wellness.

Vasey hopes that health-motivated people will return to the simple pleasures of water in much the same way they've recently rediscovered the myriad benefits of whole foods over heavily processed and aggressively marketed industrial fare. "Nature gave us water, not soft drinks," he says. "It's time to get back to basics."

WHY WATER MATTERS

Even healthy eaters often underestimate the importance of their water intake and wind up suffering from chronic, low-grade dehydration. Here are just a few reasons good hydration is essential to good health:

Energy: Suboptimal hydration slows the activity of enzymes, including those responsible for producing energy, leading to feelings of fatigue. Even a slight reduction in hydration can lower metabolism and reduce your ability to exercise efficiently.

Digestion: Our bodies produce an average of 7 liters of digestive juices daily. When we don't drink enough liquid, our secretions are more limited and the digestive process is inhibited. (Note that drinking too much water all at once, particularly with food, can also dilute digestive juices, reducing their efficacy and leading to indigestion.)

Regularity: As partially digested food passes through the colon, the colon absorbs excess liquid and transfers it to the bloodstream so that a stool of normal consistency is

formed. When the body is low on water, it extracts too much liquid from the stool, which then becomes hard, dry and difficult to eliminate. Slowed elimination contributes to bodywide toxicity and inflammation.
Blood Pressure: When we are chronically dehydrated, our blood becomes thicker and more viscous. Additionally, in response to reduced overall blood volume, the blood vessels contract. To compensate for the increased vein-wall tension and increased blood viscosity, the body must work harder to push blood through the veins, resulting in elevated blood pressure.
Stomach Health: Under normal circumstances, the stomach secretes a layer of mucus (which is composed of 98 percent water) to prevent its mucus membranes from being destroyed by the highly acidic digestive fluid it produces. Chronic dehydration, though, impedes mucus production and may irritate and produce ulcers in the stomach lining.
Respiration: The moist mucus membranes in the respiratory region are protective; however, in a state of chronic dehydration, they dry out and become vulnerable to attack from substances that might exist in inhaled air, such as dust and pollen.
Acid-Alkaline Balance: Dehydration causes enzymatic slowdown, interrupting important biochemical transformations, with acidifying results at the cellular level. The acidification of the body’s internal cellular environment can be further worsened when excretory organs responsible for eliminating acids (e.g., the skin and kidneys) don’t have enough liquid to do their jobs properly. An overly acidic biochemical environment can give rise to a host of inflammatory health conditions, as well as yeast and fungus growth.

Weight Management: Feelings of thirst can be confused with hunger, both because eating can soothe thirst and also because dehydration-induced fatigue is often misinterpreted as a lack of fuel (e.g., sugar). Both dynamics can lead to false sensations of hunger, triggering overeating and weight gain. Inadequate hydration can also promote the storage of inflammatory toxins, which can also promote weight gain.

Skin Health: Dehydrated skin loses elasticity and has a dry, flaky appearance and texture. But dehydration can also lead to skin irritation and rashes, including conditions like eczema. We need to sweat about 24 ounces a day to properly dilute and transport the toxins being eliminated through our skin. When we are chronically dehydrated, the sweat becomes more concentrated and toxins aren't removed from our systems as readily, which can lead to skin irritation and inflammation.

Cholesterol: Cholesterol is an essential element in cell membrane construction. When we are in a state of chronic dehydration and too much liquid is removed from within the cell walls, the body tries to stop the loss by producing more cholesterol to shore up the cell membrane. Although the cholesterol protects the cell membrane from being so permeable, the overproduction introduces too much cholesterol into the bloodstream.

Kidney and Urinary Health: When we don't drink enough liquid, our kidneys struggle to flush water-soluble toxins from our system. When we don't adequately dilute the toxins in our urine, the toxins irritate the urinary mucus membranes and create a germ- and infection-friendly environment.

Joint Health: Dehydrated cartilage and ligaments are more brittle and prone to damage. Joints can also

become painfully inflamed when irritants, usually toxins produced by the body and concentrated in our blood and cellular fluids, attack them, setting the stage for arthritis.

Aging: The normal aging process involves a gradual loss of cell volume and an imbalance of the extracellular and intracellular fluids. This loss of cellular water can be accelerated when we don’t ingest enough liquids, or when our cell membranes aren’t capable of maintaining a proper fluid balance.

6 HYDRATION TIPS

1. Start each day with a glass of water (no ice). Drink it down before you have coffee, tea or juice. It will help replace fluids lost overnight and get your hydration efforts off to a good start. Also fill a water bottle you can take with you in the car, or keep with you and refill during the workday.

2. Eat two or three servings of fruits and vegetables at every meal. They are brimming with water and include the minerals that help your body absorb and use it properly. Keep in mind that most processed foods (including sugars, flours, salty snacks and processed meats) result in a lowering of the body’s water table. Eating a lot of meat puts pressure on your kidneys and tends to increase your body’s need for water.

3. Establish regular water breaks, if possible. Tailor your drinking to meet your needs. For instance, drink an extra glass of water if you worked out or didn’t squeeze enough fruits and vegetables into your day.

4. Substitute sparkling water and low-sodium vegetable juice for soda and fruit juice. While it’s true that all beverages count toward your daily tally, the sugar in regular soda and fruit juice, as well as the chemicals in

diet versions, can trigger a host of unwanted reactions in the body, including blood-sugar spikes.
5. Install water filters in your home and use a pitcher-type filter at the office. Resort to bottled water when you must, but beware of the drawbacks: It’s expensive and environmentally wasteful, the plastic contains harmful chemicals that can leach into the water, and there are no guarantees that bottled water is any better for you than the water flowing from the tap.
6. Cook with high-quality sea salt. A good, unrefined sea salt is rich in trace minerals, which are key to cell health and hydration. Bonus: Sea salt is also lower in sodium than table salt.

INFO ON DRINKING WATER “TWO HOURS AFTER A MEAL” BASED ON DIGESTION.

http://www.aic.cuhk.edu.hk/web8/gastric_emptying.htm

http://www.youtube.com/watch?v=URHBBE3RKEs

http://www.ncbi.nlm.nih.gov/pubmed/1091963

https://www.google.com/url?q=http://keiserstudents.tripod.com/sitebuildercontent/sitebuilderfiles/gastricemptyingabbycox.ppt&sa=U&rct=j&ei=OBBaUOuOO8yK0QGkrYGoDg&ved=0CDUQFjAIOCg&usg=AFQjCNFsBaIRPq7hHnUIyHb3HYjq5OX8mQ&cad=rja

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